

HIDDEN LAKES SUBDIVISION AND GOLF COURSE (PWS 1090195) SOURCE WATER ASSESSMENT REPORT

April 27, 2001



State of Idaho Department of Environmental Quality

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Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Idaho Department of Environmental Quality is completing the assessments for all Idaho public drinking water systems. The assessment for your particular drinking water source is based on a land use inventory within a 1,000 foot radius of your drinking water source, sensitivity factors associated with the source and characteristics associated with either your aquifer or watershed in which you live.

This report, *Source Water Assessment for Hidden Lakes Subdivision and Golf Course (PWS 1090195)* located in Bonner County, Idaho, describes the public drinking water system, the associated potential contaminant sources located within a 1,000' boundary around the drinking water source, and the susceptibility (risk) that may be associated with any associated potential contaminants. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and is not intended to undermine the confidence in your water system.**

The Hidden Lakes Subdivision and Golf Course drinking water system consists of two wells. The first of which was drilled in 1985. The second well was drilled in the fall of 2000, in anticipation of growth in the subdivision. The wells are located on the golf course just north of the fairway between the #3 tee and green. Each well has a dedicated well lot.

Well #1

Well #1 is maintained appropriately with intact sanitary and surface seals. The well was drilled in an area with a clay layer that provides some protection against the movement of contaminants from the land surface to the aquifer. The Idaho Department of Water Resources (IDWR) *Well Construction Standards Rules (1993)* require all public water systems (PWSs) to follow DEQ standards as well. IDAPA 58.01.08.550 requires that PWSs follow the *Recommended Standards for Water Works (1997)* during construction. Various aspects of the standards can be assessed from well logs. Table 1 of the *Recommended Standards for Water Works (1997)* states that 6-inch steel casing requires a thickness of 0.280 inches. The Hidden Lakes Subdivision and Golf Course well uses 0.250-inch thick casing. The well's surface seal does not extend into a low permeability unit, which might allow contaminants to enter the aquifer along the sides of the casing. Additionally, the well is located in the 100-year flood plain. Combined, these factors resulted in well #1 receiving a moderate system construction score.

Well #1's hydrologic sensitivity is considered to be low. The well appears to have a layer of clay over the water table that may protect it from contamination.

There are a total of ten potential contaminant sources within the delineated source water assessment area. These consist of six septic systems, a sewer lift station, a private well, the golf course and the road running through the assessment area. Well #1 has been assigned low potential contaminant/land use scores in the inorganic chemical, volatile organic chemical and synthetic organic chemical categories. The well received a moderate potential contaminant/land use score in the microbial category. Well #1's overall susceptibility in all categories was determined to be moderate.

Well #2

This well was drilled in October of 2000 and, as such, meets today's construction standards. The well has an eight-inch casing that is .322 inches thick. While the well is not considerably deep, water is drawn more than 100' below the static water level, which provides some protection against contamination. Additionally, the well is located outside of the 100-year floodplain. The well was assigned a low system construction score.

Well #2's hydrologic sensitivity score is moderate. Although this well is located relatively close to well #1 it appears that it is covered with a 40' thick layer of topsoil and sand and gravel. Just beneath this layer of moderately to well drained soil, there is a significantly thick layer of clay, which will provide some protection against contamination.

Wells #1 and #2 share almost identical source water assessment areas. Therefore, their lists of potential contaminant sites are exactly the same. Well #2 was assigned moderate potential contaminant/land use scores in the inorganic chemical and microbial categories. Its scores in the volatile organic and synthetic organic categories are low. Well #2's overall susceptibility scores are moderate in all categories.

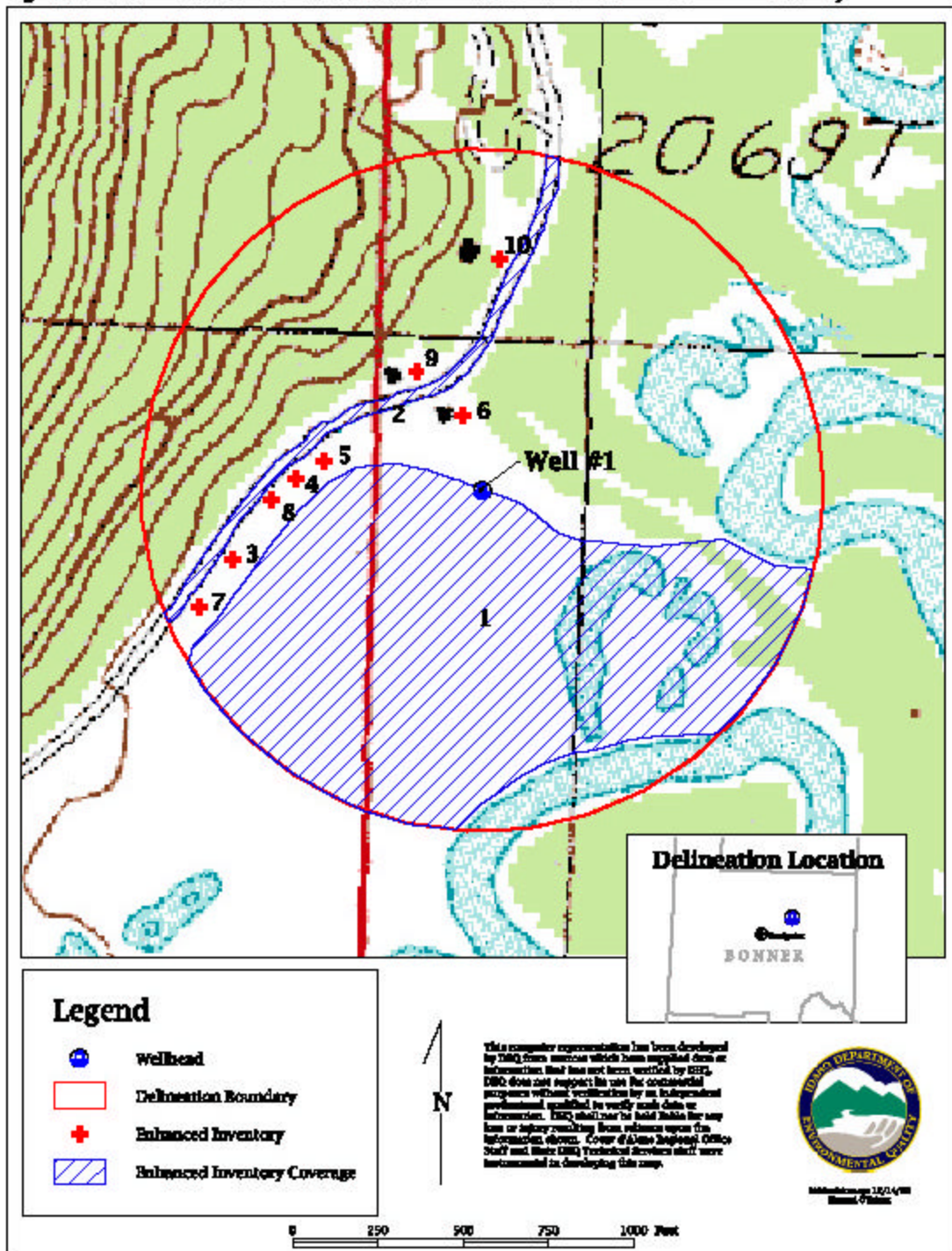
Copies of the susceptibility analyses for your system along with a map showing any potential contaminant sources is included with this summary. Information regarding the potential contaminants within the 1,000' boundary have been summarized and included in Table 1.

Table 1. Well #1 and Well #2

SITE #	Source Description	Source of Information	Potential Contaminants
1	Golf Course	Enhanced Inventory	IOC, SOC
2	Road	Enhanced Inventory	SOC, VOC
3	Septic Tank	Enhanced Inventory	IOC, Microbial
4	Septic Tank	Enhanced Inventory	IOC, Microbial
5	Septic Tank	Enhanced Inventory	IOC, Microbial
6	Private Well	Enhanced Inventory	Microbial
7	Sewer Lift Station	Enhanced Inventory	IOC, Microbial
8	Septic Tank	Enhanced Inventory	IOC, Microbial
9	Septic Tank	Enhanced Inventory	IOC, Microbial
10	Septic Tank	Enhanced Inventory	IOC, Microbial

IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Figure 1. Hidden Lakes Subdivision and Golf Course Delineation Location and Potential Contaminant Inventory



This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

Due to the relatively high density of septic systems located near the wells, Hidden Lakes Subdivision and Golf Course should focus source water protection activities on implementation of practices aimed at reducing the possibility of microbial contamination of the wells. The water system should ensure regular maintenance of septic systems located in the source water assessment areas. This includes locating septic tanks and sewer lines and visually inspecting them for surfacing leaks. The system operator may want to establish a dialogue with local residents regarding this. Additionally, because the wells are located on a golf course, it is important to assure proper and conservative use of lawn care chemicals in the area surrounding the wells. Hidden Lakes Subdivision and Golf Course should consider developing a source water protection plan that includes a contingency plan outlining the steps to be taken in the event of an emergency, such as bacteriological contamination of the wells. Source water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term.

For assistance in developing source water protection strategies please contact Alan Miller at the Coeur d’Alene regional IDEQ office at (208) 769-1422.

DEQ website:

<http://www.deq.state.id.us>

Attachment A

Hidden Lakes Subdivision and Golf Course Susceptibility Analysis Worksheets

Ground Water Final Susceptibility Scoring

0-5 = Low Susceptibility

6-12 = Moderate Susceptibility

13-18 = High Susceptibility

1. System Construction		SCORE			
Drill Date	10/20/85				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	YES	2000			
Well meets IDWR construction standards	NO	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	NO	2			
Highest production 100 feet below static water level	YES	0			
Well located outside the 100 year flood plain	NO	1			
Total System Construction Score		4			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	YES	0			
Vadose zone composed of gravel, fractured rock or unknown	NO	0			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	YES	0			
Total Hydrologic Score		1			
3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	IRRIGATED PASTURE	1	1	1	1
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO	NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A		1	1	1	1
Potential Contaminant / Land Use - ZONE 1B					
Contaminant sources present (Number of Sources)	YES	1	1	2	8
(Score = # Sources X 2) 8 Points Maximum		2	2	4	8
Sources of Class II or III leachable contaminants or 4 Points Maximum	YES	8	1	2	
Zone 1B contains or intercepts a Group 1 Area	NO	4	1	2	
Land use Zone 1B Less Than 25% Agricultural Land	NO	0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B		0	0	0	0
Cumulative Potential Contaminant / Land Use Score		7	4	7	9
4. Final Susceptibility Source Score		7	6	7	8
5. Final Well Ranking		Moderate	Moderate	Moderate	Moderate

1. System Construction		SCORE			
Drill Date	10/10/00				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	NO	0			
Well meets IDWR construction standards	YES	0			
Wellhead and surface seal maintained	NO	1			
Casing and annular seal extend to low permeability unit	YES	0			
Highest production 100 feet below static water level	YES	0			
Well located outside the 100 year flood plain	YES	0			
Total System Construction Score		1			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	NO	2			
Vadose zone composed of gravel, fractured rock or unknown	YES	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	YES	0			
Total Hydrologic Score		4			
3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	IRRIGATED PASTURE	1	1	1	1
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO	NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A		1	1	1	1
Potential Contaminant / Land Use - ZONE 1B					
Contaminant sources present (Number of Sources)	YES	8	1	2	8
(Score = # Sources X 2) 8 Points Maximum		8	2	4	8
Sources of Class II or III leachable contaminants or	YES	8	1	2	
4 Points Maximum		4	1	2	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B Less Than 25% Agricultural Land		0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B		12	3	6	8
Cumulative Potential Contaminant / Land Use Score		13	4	7	9
4. Final Susceptibility Source Score		9	6	7	8
5. Final Well Ranking		Moderate	Moderate	Moderate	Moderate

POTENTIAL CONTAMINANT INVENTORY

LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as **ASuperfund** is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.